

Claims

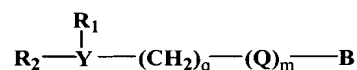
What is claimed is:

1. An oil containing starch granule comprising:

(a) a starch, said starch being present in an amount to form an effective matrix for said granule;

(b) an oil, said oil being capable of providing a benefit-additive to a substrate upon contact therewith, said substrate being selected from the group consisting of fabrics, hard surfaces, hair and skin; and

(c) an effective amount of an organic compound for inhibiting the migration of said oil to the surface of said starch granule, said compound being represented by the following structure:



wherein R_1 and R_2 are each independently, H or:

(a) $\text{C}_1\text{-C}_{22}$ alkylencarboxy moiety having the formula $-(\text{CH}_2)_e\text{R}_3$ wherein R_3 is $-\text{NHCOR}_4$; or $-\text{OCOR}_4$; or $-\text{NR}_5\text{COR}_4$; and wherein R_4 and R_5

are each independently $\text{C}_1\text{-C}_{22}$ alkyl or alkenyl; and e is an integer from 1 to 22; or

(b) $\text{C}_1\text{-C}_{22}$ linear or branched alkyl; or

(c) $\text{C}_1\text{-C}_{22}$ linear or branched alkenyl; or

(d) $\text{C}_2\text{-C}_{22}$ substituted or unsubstituted alkylenoxy; or

(e) $\text{C}_3\text{-C}_{22}$ substituted or unsubstituted alkylenoxy alkyl; or

(f) $\text{C}_6\text{-C}_{22}$ substituted or unsubstituted aryloxy; or

(g) $\text{C}_7\text{-C}_{22}$ substituted or unsubstituted alkylenearyl; or

(h) $\text{C}_7\text{-C}_{22}$ substituted or unsubstituted alkyleneoxyaryl; or

(i) $\text{C}_7\text{-C}_{22}$ oxyalkylenearyl; or

(j) an anionic unit having the formula:



wherein R_6 is $-\text{SO}_3\text{M}$, $-\text{OSO}_3\text{M}$, $-\text{PO}_3\text{M}$, $-\text{OPO}_3\text{M}$, Cl or mixtures thereof, wherein M is hydrogen, or one or more salt forming cations sufficient to satisfy charge balance, or mixtures thereof;

y is an integer from 1 to about 22; or

(k) a mixture comprising at least two of (a) through (j); and

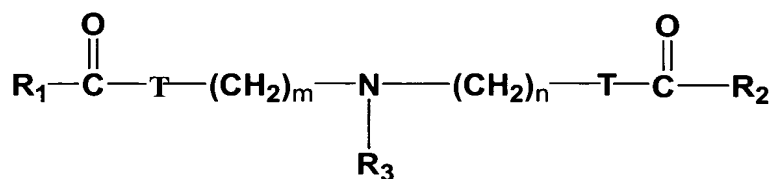
q is an integer from 0 to about 22; m is an integer from 0 to about 22; Q is $(\text{CH}_2)_m$ or $(\text{CH}_2\text{CHR}_7\text{O})$; R_7 is independently hydrogen, methyl, ethyl, propyl or benzyl; B is H or OH ; and Y is CR_1 or N .

2. An oil containing starch granule comprising:

(a) a starch, said starch forming a matrix for said granule;

(b) an oil, said oil being capable of providing a benefit-additive to a substrate upon contact therewith, said substrate being selected from the group consisting of fabrics, hard surfaces, hair and skin; and

(c) an effective amount of a difatty amido amine compound for inhibiting the migration of said oil to the surface of said starch granule, said compound being represented by the following structure:



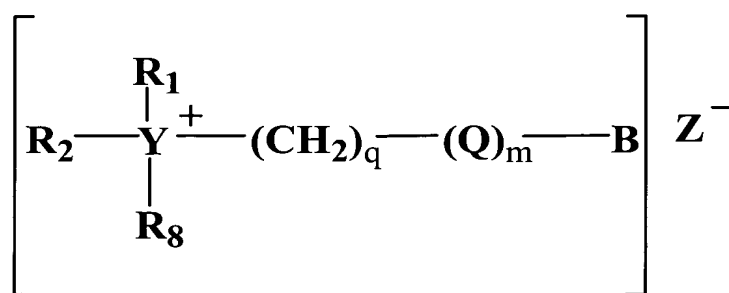
wherein R_1 and R_2 , independently, represent C_{12} to C_{30} aliphatic hydrocarbon groups, R_3 represents $(\text{CH}_2\text{CH}_2\text{O})_p\text{H}$, CH_3 or H ; T represents NH ; n is an integer from 1 to 5; m is an integer from 1 to 5 and p is an integer from 1 to 10.

3. An oil containing starch granule comprising:

(a) a starch, said starch forming a matrix for said granule;

(b) an oil, said oil being capable of providing a benefit-additive to a substrate upon contact therewith, said substrate being selected from the group consisting of fabrics, hard surfaces, hair and skin; and

(c) an effective amount of a quaternary ammonium compound for inhibiting the migration of said oil to the surface of said starch granule, said compound being represented by the following structure:



wherein R₁ and R₂ are each independently, H or:

(a) C₁-C₂₂ alkylencarboxy moiety having the formula:

-(CH₂)_eR₃ wherein R₃ is —NHCOR₄; or —OCOR₄; or —NR₅COR₄; and wherein R₄ and R₅ are each independently C₁-C₂₂ alkyl or alkenyl; and e is an integer from 1 to 22; or

(b) C₁-C₂₂ linear or branched alkyl; or

(c) C₁-C₂₂ linear or branched alkenyl; or

(d) C₂-C₂₂ substituted or unsubstituted alkylenoxy; or

(e) C₃-C₂₂ substituted or unsubstituted alkylenoxy alkyl; or

(f) C₆-C₂₂ substituted or unsubstituted aryloxy; or

(g) C₇-C₂₂ substituted or unsubstituted alkylenearyl; or

(h) C₇-C₂₂ substituted or unsubstituted alkyleneoxyaryl; or

(i) C₇-C₂₂ oxyalkylenearyl; or

(j) an anionic unit having the formula:



wherein R_6 is $-\text{SO}_3\text{M}$, $-\text{OSO}_3\text{M}$, $-\text{PO}_3\text{M}$, $-\text{OPO}_3\text{M}$, Cl or mixtures thereof, wherein M is hydrogen, or one or more salt forming cations sufficient to satisfy charge balance, or mixtures thereof; R_6 may also be chloride; y is an integer from 1 to about 22; and

- 5 (k) a mixture comprising at least two of (a) through (j); and
 q is an integer from 0 to about 22; m is an integer from 0 to about 22; Q is $(\text{CH}_2)_m$ or $(\text{CH}_2\text{CHR}_7\text{O})$; R_7 is independently hydrogen, methyl, ethyl, propyl or benzyl; and mixtures thereof; B is H or OH ; Y is N ; R_8 is H or $\text{C}_1\text{-C}_4$ alkyl; Z^- is a counter anion, and preferably chloride, or methyl sulfate.

10 4. An oil containing starch granule in accordance with claims 1, 2 or 3 wherein said oil comprises a perfume.

15 5. A method of preparing an oil containing starch granule comprising the steps of:

- 20 (a) providing a dispersion of starch in water to form a starch slurry;
(b) melting an effective amount of an organic compound such as an amido amine comprising bis (alkyl amidoethyl)-2-polyethoxy amine to form an amidoamine melt;
(c) adding a fragrance oil to the organic compound melt or amidoamine melt of step (b) to form a solution of amidoamine in fragrance oil;
(d) adding the solution of step (c) to the starch slurry of step (a);
(e) homogenizing the resultant slurry by mixing to form a uniform homogeneous mixture; and
25 (f) spray-drying said homogeneous mixture to form an oil containing starch granule.

6. The method according to claim 5 wherein said organic compound is a quaternary ammonium compound.

- 30 7. A method of laundering fabrics comprising the steps of
(a) forming an aqueous solution containing an effective amount of the oil containing starch granule in accordance with claims 1, 2 or 3; and
(b) contacting the fabrics to be laundered with the aqueous solution of (a).

8. A method in accordance with claim 7 wherein said oil comprises a perfume .

9. A method in accordance with claim 7 wherein said oil containing starch granule comprises a difatty amido amine compound.

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10. A method in accordance with claim 7 wherein said oil containing starch granule comprises a quaternary ammonium compound.

11. A laundry detergent composition comprising:

- 10 (a) a surfactant or surfactant mixture selected from the group consisting of anionic, nonionic and cationic surfactants; and
(b) an effective amount of an oil containing starch granule in accordance with claims 1, 2 or 3.

15 12. A laundry detergent composition in accordance with claim 11 where said oil comprises a perfume.

13. A laundry detergent composition in accordance with claim 11 wherein said oil containing starch granule comprises a difatty amido amine compound.

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14. A laundry detergent composition in accordance with claim 11 wherein said oil containing starch granule comprises a quaternary ammonium compound.